

REMARKS

Claims 1-15 are pending in the application and new claims 16-32 have been added to the application. Claims 1, 6, 9 and 12 have been revised. Applicant respectfully requests reconsideration of the application.

Information Disclosure Statement

The Examiner has stated that the Information Disclosure Statement filed on January 7, 2002, fails to comply with 37 C.F.R. 1.98(a)(2) which requires a legible copy of each U.S. and foreign patent. Applicants will submit a substitute Information Disclosure Statement to ensure that the Office has copies of the referenced documents.

Objections

The Examiner has objected to the title of the invention as allegedly not being sufficiently descriptive. Notwithstanding the propriety of this objection, in order to speed the prosecution Applicants have revised the title to read: COMMAND AND CONTROL SYSTEM FOR CONTROLLING OPERATIONAL SEQUENCING OF MULTIPLE TURBOGENERATORS USING A SELECTED CONTROL MODE. This title is also considered sufficiently descriptive.

The Examiner has objected to the drawings on the assertion that several reference numbers are difficult to read. Although Applicants believe the drawings are sufficiently clear, Applicant has submitted substitute drawings. Formal drawings will be submitted upon allowance of the application.

The Examiner has also objected to the drawings under 37 C.F.R. §1.83(a) as allegedly not showing every feature of the invention specified in the claims. This objection is respectfully traversed. First, a plurality of turbogenerators is identified as the "turbogenerator power controllers/inverters 81, 82, 83, and 84" as shown in Figure 4 and discussed in the specification

on pages 12-13. Second, an output of the plurality of individual turbogenerators is also shown in Figure 4 as a signal from contractor 85 to the common junction box 70. Third, the proportional-plus-integrated control is included within the sequencing and control logic system 107 (as discussed in the specification on page 14, lines 2-5). Thus, it is not necessary to show this feature as a separate block in Figure 4. Accordingly, Applicant respectfully requests that this objection be reconsidered and withdrawn.

35 U.S.C. §112, Second Paragraph

Claims 1-15 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctively claim the subject matter which applicant regards as the invention. This rejection is traversed in its entirety.

The Examiner rejected claim 1 as allegedly indefinite solely by asking the following question, "What is meant by having a 'plurality of disconnect switches'?" The Examiner then makes three additional queries:

Are the switches disconnected? Are the switches been [sic] used for making contact between the turbogenerators controller and the bus? Are the switches open (disconnected) all the time?

As to the first question, it is clear to one skilled in the art what is meant by the phrase "plurality of disconnect switches." It is well understood in the art and in the law that a "plurality" means more than one.¹ It is also well understood that switches are devices that open and close circuits to control the flow of electricity (*e.g.*, Van Valkenburg, Nooger & Neville, Inc., Basic Electricity

¹ *E.g.*, Dayco Products Inc. v. Total Containment Inc., 59 USPQ2d 1489, 1498 (Fed. Cir. 2001) ("we find no reason to give 'plurality ...of projections' any definition other than its ordinary definition of '*two or more*'."; emphasis added); Sjolund v. Musland, 6 USPQ2d 2020, 2026 (Fed. Cir. 1988) ("One difference between the invention and what was old is immediately apparent: claim 7 of the '071 patent claims a 'plurality' of panels -- *that is to say, more than one* -- whereas the old practice was to use a single framed panel."; emphasis added); In re Deters,

(1992)). Likewise, the term disconnect switch is well known in the art as a device used, for example, in a power system, for opening or closing the connections in or among circuits or part of a circuit, when desired, or for purposes of isolation, and the term is thus sufficiently definite. As for the second question, it is understood by those skilled in the art that a disconnect switch is not a switch that is “disconnected.” Regarding the third question, Figure 4 clearly illustrates one embodiment having a disconnect switch 72 that is connected between a utility grid 71 and a common junction box 70 (and discussed in the specification on page 12, lines 7-11). Finally, as for the fourth question, it is equally well understood that if a “switch” was open “all the time” it would not be a switch. Thus, Applicants assert that there is no confusion by what is meant by a “plurality of disconnect switches.”

Applicants further emphasize that the law of indefiniteness has no applicability to situations such as this. Section 112 paragraph 2 of the Patent Act requires that a patent specification conclude with one or more claims “particularly pointing out and distinctly claiming subject matter which the applicant regards as his invention.” 35 U.S.C. §112, ¶ 2. The Federal Circuit has held the standard for assessing whether a patent claim is sufficiently definite to satisfy the statutory requirement to be as follows: If one skilled in the art would understand the bounds of the claim when read in light of the specification, then the claim satisfies section 112 paragraph 2. *E.g., Miles Labs., Inc. v. Shandon, Inc.*, 997 F.2d 870, 875, 27 USPQ2d 1123, 1126 (Fed. Cir. 1993). In other words, “If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, [section] 112 demands no more.” *Miles Lab., Inc. v. Shandon Inc.*, 997 F.2d 870, 875, 27 USPQ2d 1123, 1126 (Fed. Cir. 1993), *cert. denied*, 114 S. Ct. 943 (1994); *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d

185 USPQ 644, 648 (CCPA 1975) (court refers to patent claims including the term “a ‘plurality,’

1367, 1385, 231 USPQ 81, 94-95 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987). There is no doubt that one skilled in the art would know the meaning of more than one disconnect switch, and the claim is clear and unambiguous. Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). Thus, the rejection for indefiniteness is inappropriate under the law and should be withdrawn.

The same applies to the rejection for alleged indefiniteness of claim 2 based on the phrase “and in addition.” There is nothing unclear about this claim that would render its scope unclear. It is apparent that “and in addition” would be understood to have the same meaning as “further comprising,” another well known term in the patent law. Indeed, the MPEP specifically refers to and acknowledges the use of language alternative to the “further comprising” transition (*e.g.*, use of the phrase “in which”; MPEP Section 6.08(n)). Accordingly, Applicants request that this rejection be reconsidered and withdrawn as well.

The Examiner has also rejected claim 3 as allegedly indefinite, apparently with respect to the terms “selected control mode” and “utility following mode.” In this regard, the Examiner simply states:

[I]s the selected control mode the same as the utility load following mode? Are those two modes the same? According to the claim both modes are equal? What is the relationship between modes and the utility power consumption and turbogenerator power generation?

Regarding the first question, the selected control mode is not the same as the utility load following mode. However, the relationship between the selected control mode and the utility following mode would be clear to someone skilled in the art and is discussed in detail in the specification at page 13, lines 4-23 and shown in Figures 5-7. In one embodiment, the control mode can be selected to provide one of three modes of operation: a utility load following mode, a

i.e., more than one”; emphasis added).

utility base load mode, or a base load mode. Therefore, in response to the second and third questions, it is plain that the control mode is the same as or equal to the utility load following mode only when the utility load following mode is selected to be the control mode. As for the last question, Claim 3 recites that when the selected control mode is the utility load following mode, utility power consumption and turbogenerator power generation are compared to produce an error signal and a power demand signal. Thus, Applicants assert that there is no confusion by what is meant by these terms and this rejection should be reconsidered and withdrawn.

The Examiner also rejected claim 9, apparently on the allegation that the term “sequencing” is indefinite. The term is not indefinite under 35 U.S.C. §112, ¶ 2. Various types of operational “sequencing” are exemplified in the specification on pages 14-17. For example, the specification discloses that operational sequencing includes the “start, stop and loading for each of the individual turbogenerators” (*see, e.g.*, page 14, lines 1-2). Applicants request that this rejection be reconsidered and withdrawn as well.

It appears that the Examiner may have also rejected claims 11 and 13 as allegedly indefinite. The Examiner has simply asked the following question: “In claim 11, the turbogenerator is shut down, yet in claim 13, the turbogenerator is restarted in the event of a shutdown?” It is noted that claims 11 and 13, which relate to the shutdown and restart operations of the turbogenerators, are not dependent upon each other and claim subject matter relating to two independent features. As discussed in the specification, claim 11 relates to the start *sequencing of each of the turbogenerators* (*see, e.g.*, page 14, lines 6-10) and claim 13 relates to *a restart of a turbogenerator in the event of a fault shutdown* (*see, e.g.*, page 14, lines 15-16). Thus, Applicant asserts that there is no issue of clarity regarding these terms and requests that this rejection be reconsidered and withdrawn.

The Examiner also rejected claim 15 by asking questions regarding the terms “power hysteresis bands,” “set points” and “rate limits.” These terms are discussed in the specification on page 15, lines 2-5, and hysteresis, set points, and rate limits are terms well known in the art and, thus, sufficiently definite under 35 U.S.C. § 112, ¶ 2. (*See, e.g.,* G. Bertotti, *Hysteresis in Magnetism: For Physicists, Materials Scientists, and Engineers* (Morgan Kaufmann 1998)). Applicant asserts that there is no confusion by use of the terms “power hysteresis bands,” “set points” and “rate limits,” and submits that the rejection for indefiniteness is inappropriate under the law and should be withdrawn.

Accordingly, Applicant submits that all claims are in compliance with 35 U.S.C. § 112. When the Examiner withdraws these rejections, as is appropriate under existing law, Applicants will be happy to consider revising the claims to introduce language that may be preferred by the Examiner. For example, Applicants would be agreeable to changing “and in addition” to “further comprising” in claim 2. However, although such trivial language changes raise no issue of patentability, Applicants will not alter these claims while a rejection under 35 U.S.C. § 112, second paragraph, is outstanding due to the fact that such claim amendments may be construed as directed to patentability of the claims. *See Festo Corp. v. Shoketsu Kinsoku Kogyo Kabushiki Co.*, 56 U.S.P.Q.2d 1865 (Fed. Cir. 2000).

35 U.S.C. § 103

Claims 1-15 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,194,794 to Lampe, et al., (“Lampe”) in view of U.S. Patent No. 6,093,975 to Peticolas (“Peticolas”). This rejection is respectfully traversed.

The present invention is directed to a command and control system and method for controlling multiple turbogenerators in a utility grid parallel system. More specifically, the

command and control system controls multiple turbogenerators which may depend upon the control mode selected by an operator (e.g., a utility load following mode, a utility peak shaving mode, and a base load mode). A master controller is typically employed to provide start and stop sequencing, coordinate power commands, and provide fault handling to the individual turbogenerators. Importantly, the master controller balances the run times and load demands of the individual turbogenerators. This serves to increase the reliability and extend the useful lifetimes of the individual turbogenerators. It also increases the economic efficiency of the entire system.

In contrast, Lampe is said to relate to a system and method that integrates a reciprocating engine (or internal combustion) generator set and a plurality of turbogenerators into a single power generation package to improve the functionality of each individual system. In the Lampe system, the reciprocating engine generator set is said to be used both to start the turbogenerators or to supply a portion of the load during normal operation. In addition, the reciprocating engine in the Lampe system is said to be used as either an energy sink or an energy source to eliminate the need for separate energy sinks or sources.

Peticolas is said to relate to a turbogenerator controller with a microprocessor-based control system having a synchronous condenser, line commutated inverter, and a battery coupled to the turbogenerator/motor controller. When a load transient occurs, the gas turbine engine and the synchronous condenser, which draws its power from the line commutated inverter and battery, is said to temporarily provide the power required to meet the demand of the load transient until the control system increases the speed of the gas turbine, thus producing more power out of the turbogenerator. In the event of a sudden reduction in load, an auxiliary load

device temporarily draws load until the control system can respond and reduce the output power of the turbogenerator.

Neither Lampe nor Peticolas suggests a control system for a plurality of turbogenerators having a master controller to control operational sequencing of the individual turbogenerators in a selected control mode to optimize the economic investment return of the turbogenerator system. More particularly, they do not propose the present invention which provides a control system for a plurality of turbogenerators having a master controller to control operational sequences, such as the start, stop and load sequencing, in order to balance the run times and load demands for the individual turbogenerators to increase the system lifespan and overall reliability.

None of the documents of record, alone or in combination, suggests or discloses a control system for a plurality of turbogenerators comprising a plurality of individual turbogenerators and a master controller "to control operational sequencing of the individual turbogenerators in a selected control mode" as recited in independent claim 1, as amended, and new claim 16.

Accordingly, Applicant respectfully submits that independent claims 1 and 16, and claims 2-15 and 17-32 dependent thereon, patentably distinguish over the references of record, either alone or in combination.

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In view of the foregoing, Applicant respectfully submits that claims 1-32 patentably distinguish over the references of record and are in condition for allowance. Reconsideration and withdrawal of the rejections are respectfully solicited.

Respectfully submitted,
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